



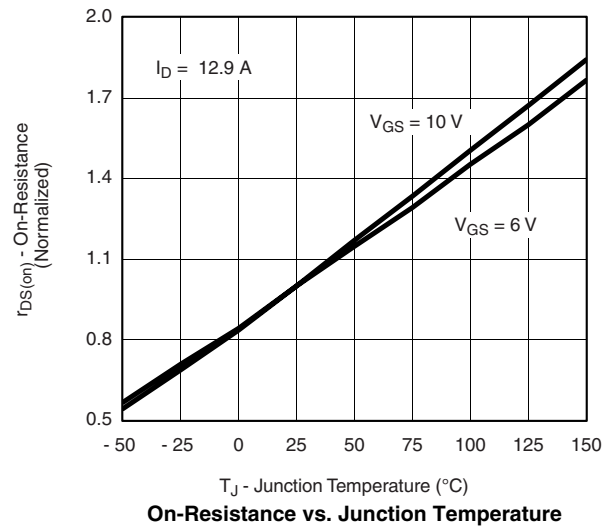
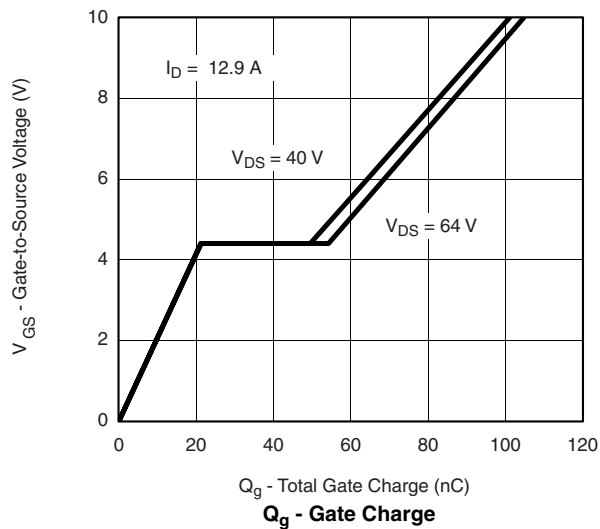
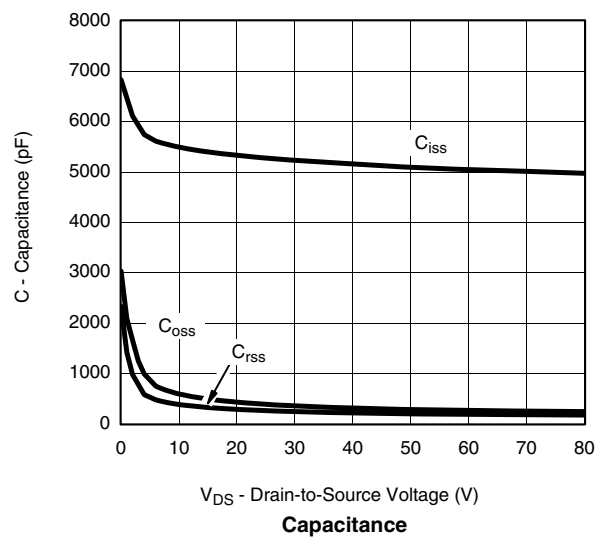
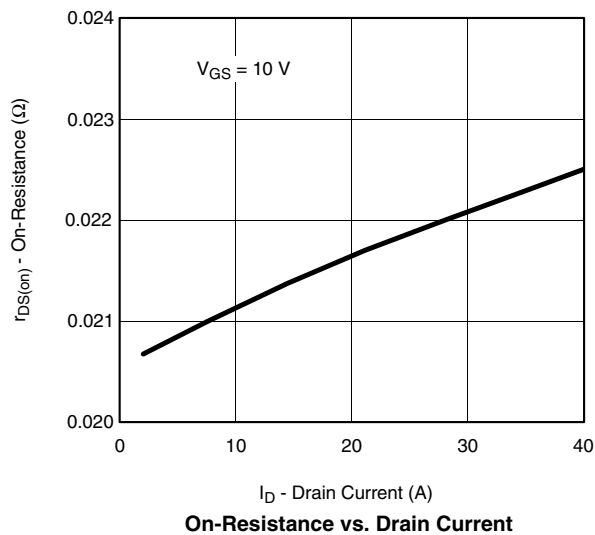
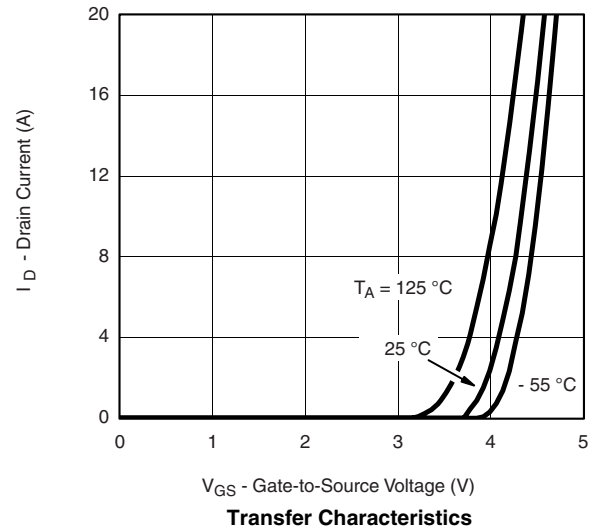
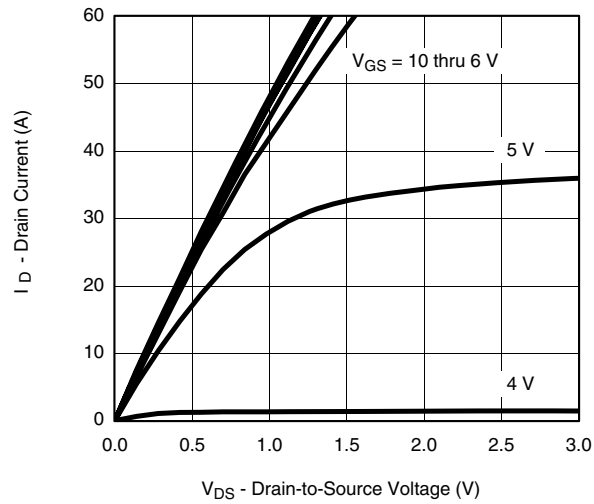
SPECIFICATIONS $T_J = 25\text{ }^{\circ}\text{C}$ , unless otherwise noted						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{DS}$	$V_{GS} = 0\text{ V}$ , $I_D = -250\text{ }\mu\text{A}$	- 80			V
$V_{DS}$ Temperature Coefficient	$\Delta V_{DS}/T_J$	$I_D = -250\text{ }\mu\text{A}$		- 80		mV/ $^{\circ}\text{C}$
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}/T_J$			7.5		
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = -250\text{ }\mu\text{A}$	- 2	- 3	- 4	V
Gate-Source Leakage	$I_{GSS}$	$V_{DS} = 0\text{ V}$ , $V_{GS} = \pm 20\text{ V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -80\text{ V}$ , $V_{GS} = 0\text{ V}$			- 1	$\mu\text{A}$
		$V_{DS} = -80\text{ V}$ , $V_{GS} = 0\text{ V}$ , $T_J = 55\text{ }^{\circ}\text{C}$			- 10	
On-State Drain Current <sup>a</sup>	$I_{D(on)}$	$V_{DS} \geq 5\text{ V}$ , $V_{GS} = -10\text{ V}$				A
Drain-Source On-State Resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = -10\text{ V}$ , $I_D = -12.9\text{ A}$		0.022	0.026	$\Omega$
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = -15\text{ V}$ , $I_D = -12.9\text{ A}$		39		S
Dynamic <sup>b</sup>						
Input Capacitance	$C_{iss}$	$V_{DS} = -40\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 1\text{ MHz}$		5160		pF
Output Capacitance	$C_{oss}$			320		
Reverse Transfer Capacitance	$C_{rss}$			220		
Total Gate Charge	$Q_g$	$V_{DS} = -40\text{ V}$ , $V_{GS} = -10\text{ V}$ , $I_D = -12.9\text{ A}$		102	155	nC
Gate-Source Charge	$Q_{gs}$			22		
Gate-Drain Charge	$Q_{gd}$			29		
Gate Resistance	$R_g$	$f = 1\text{ MHz}$		4		$\Omega$
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -40\text{ V}$ , $R_L = 3.7\text{ }\Omega$ $I_D \cong -10.8\text{ A}$ , $V_{GEN} = -10\text{ V}$ , $R_g = 1\text{ }\Omega$		15	25	ns
Rise Time	$t_r$			50	75	
Turn-Off Delay Time	$t_{d(off)}$			90	135	
Fall Time	$t_f$			65	100	
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	$I_S$	$T_C = 25\text{ }^{\circ}\text{C}$			- 50	A
Pulse Diode Forward Current <sup>a</sup>	$I_{SM}$				- 60	
Body Diode Voltage	$V_{SD}$	$I_S = -10.8\text{ A}$		- 0.8	- 1.2	V
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F = -10.8\text{ A}$ , $di/dt = 100\text{ A}/\mu\text{s}$ , $T_J = 25\text{ }^{\circ}\text{C}$		60	90	ns
Body Diode Reverse Recovery Charge	$Q_{rr}$			150	235	nC
Reverse Recovery Fall Time	$t_a$			45		ns
Reverse Recovery Rise Time	$t_b$			15		

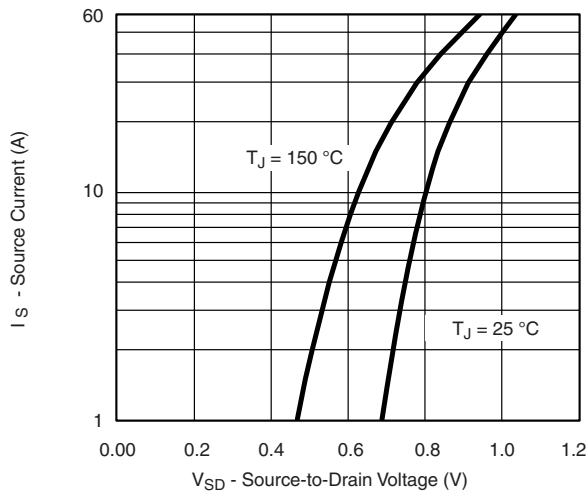
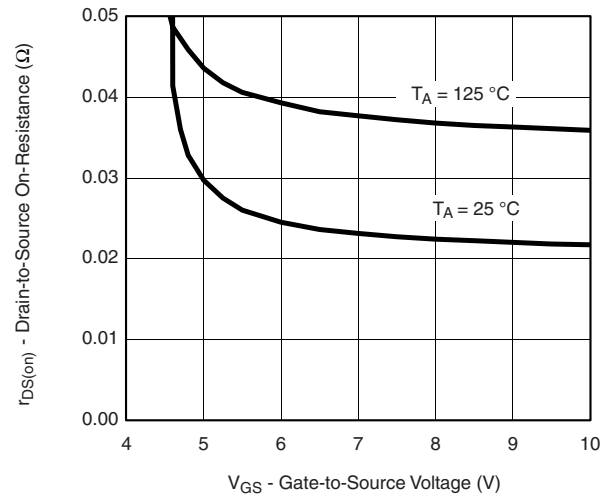
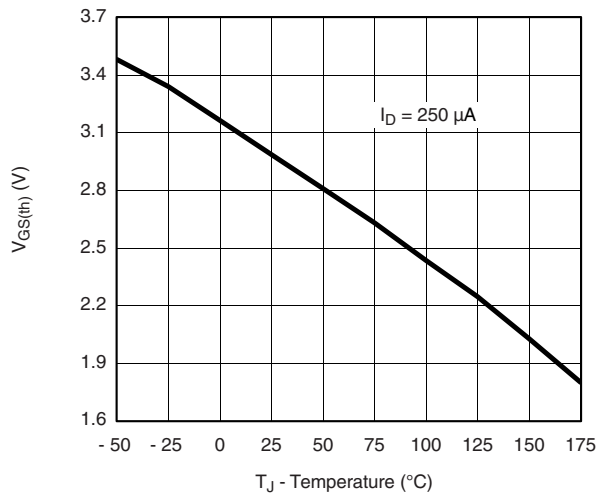
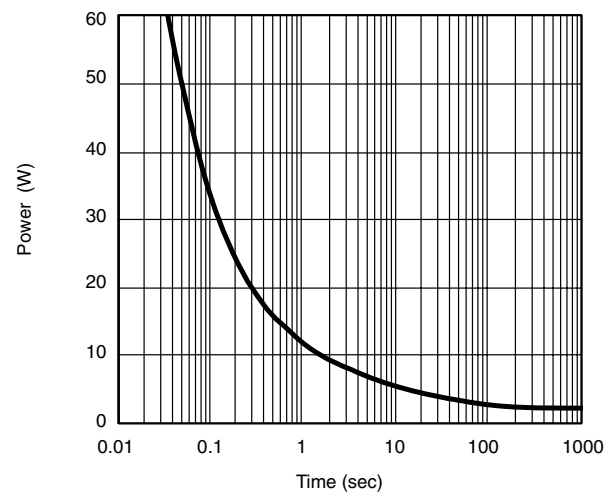
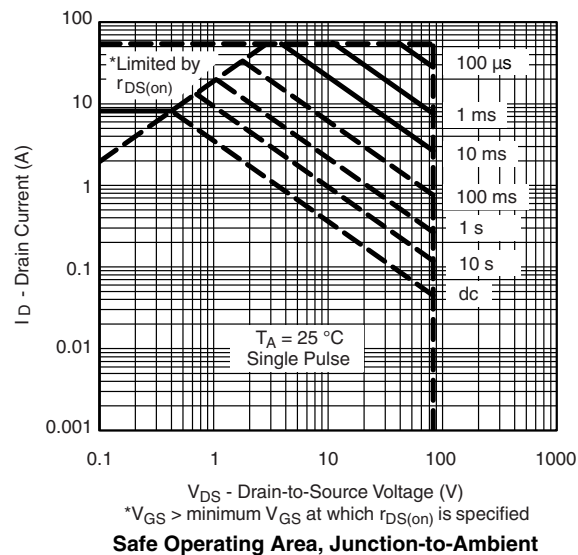
Notes:

a. Pulse test; pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$ .

b. Guaranteed by design, not subject to production testing.

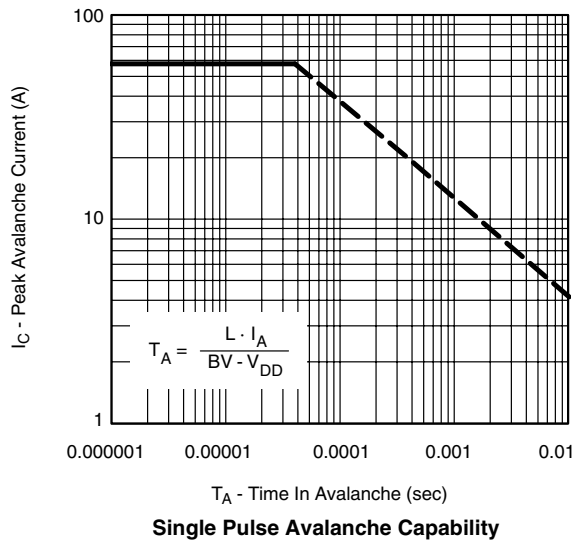
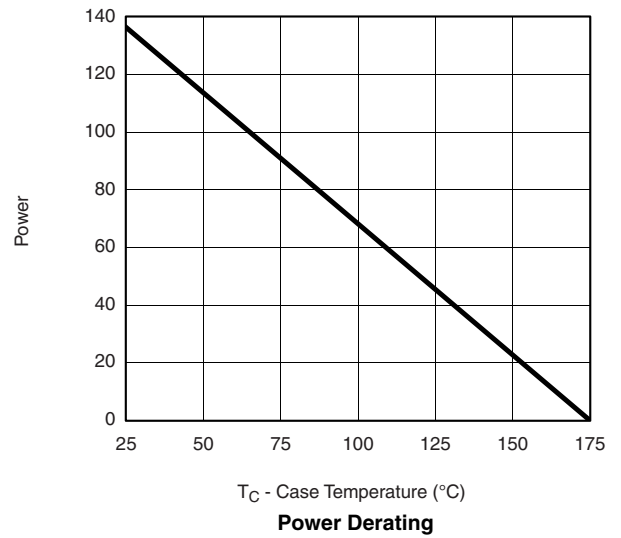
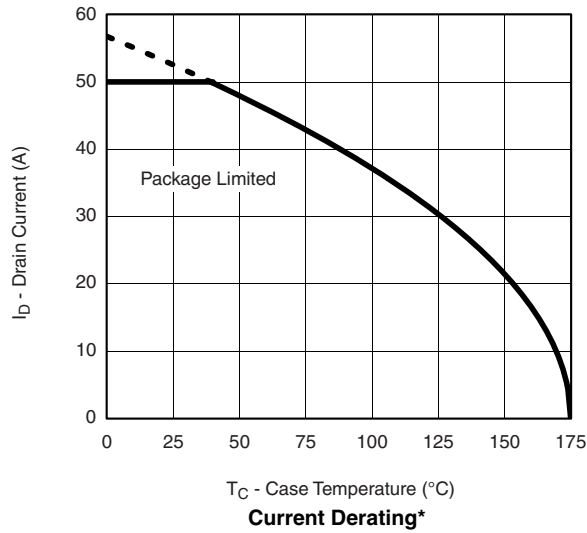
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

**TYPICAL CHARACTERISTICS** 25 °C unless noted

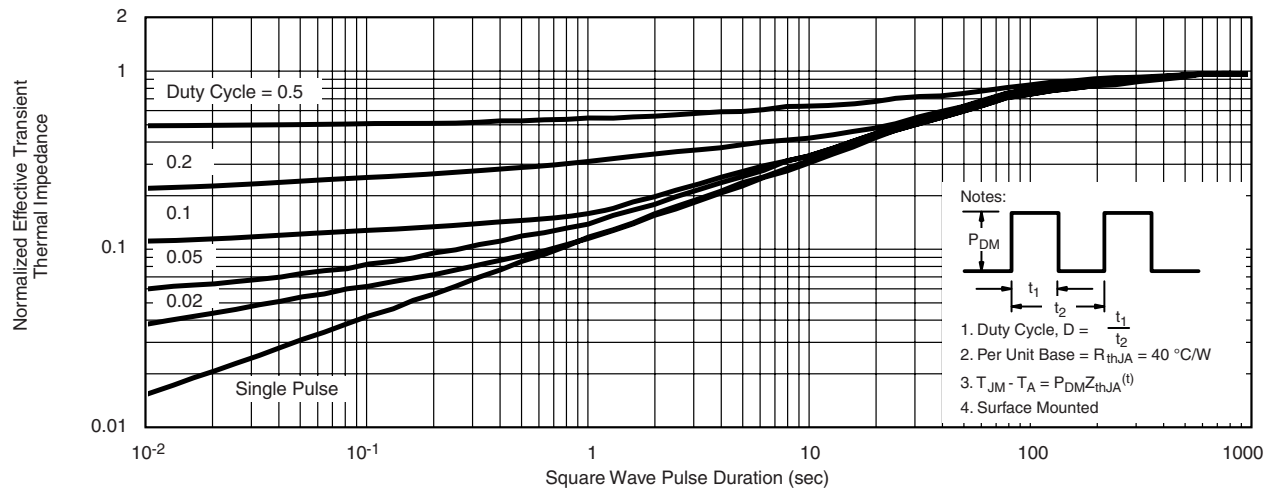
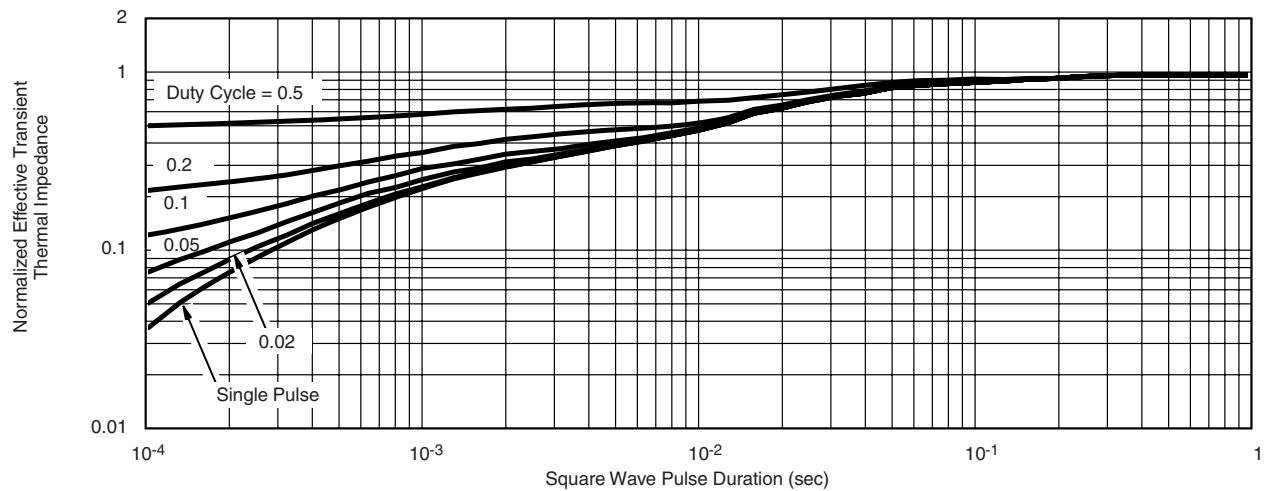
**TYPICAL CHARACTERISTICS** 25 °C unless noted**Source-Drain Diode Forward Voltage****On-Resistance vs. Gate-to-Source Voltage****Threshold Voltage****Single Pulse Power, Junction-to-Ambient****Safe Operating Area, Junction-to-Ambient**



**TYPICAL CHARACTERISTICS** 25 °C unless noted



\*The power dissipation  $P_D$  is based on  $T_{J(max)} = 175$  °C, using junction-to-case thermal resistance, and is more useful in settling the upper dissipation limit for cases where additional heatsinking is used. It is used to determine the current rating, when this rating falls below the package limit.

**TYPICAL CHARACTERISTICS** 25 °C unless noted**Normalized Thermal Transient Impedance, Junction-to-Ambient****Normalized Thermal Transient Impedance, Junction-to-Case**

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